

US008682892B1

## (12) United States Patent

(54) RANKING SEARCH RESULTS

### Panda et al.

# (10) Patent No.: US 8,682,892 B1 (45) Date of Patent: Mar. 25, 2014

(71)	Applicant:	Google Inc., Mountian View, CA (US)
(72)	Inventors:	Navneet Panda, Mountain View, CA (US); Vladimir Ofitserov, Foster City, CA (US)

		CA (05)	
(73)	Assignee:	Google Inc., Mountain View, CA (US)	)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35

U.S.C. 154(b) by 8 days.

(21) Appl. No.: 13/631,020

(22) Filed: Sep. 28, 2012

(51) **Int. Cl.** *G06F 17/30* (2006.01)

(52) **U.S. CI.**CPC .... **G06F 17/30864** (2013.01); **G06F 17/30286**(2013.01); **G06F 17/30067** (2013.01)
USPC ............. **707/726**; **707/758**; **707/688**; **707/690**;
707/692; **707/700** 

#### (56) References Cited

#### U.S. PATENT DOCUMENTS

7,519,595 B	2 * 4/2009	Solaro et al	1/1
8,190,602 B	1 * 5/2012	James	707/726
8,290,956 B	32 * 10/2012	Maim	707/737

2005/0256887	A1* :	11/2005	Eiron et al 707/100
2010/0057645	A1*	3/2010	Lauritsen 706/11
2010/0082590	A1*	4/2010	Nye 707/706
2011/0106821	A1*	5/2011	Hassanzadeh et al 707/749
2011/0106836	A1*	5/2011	Hassanzadeh et al 707/769
2011/0184936	A1*	7/2011	Lymberopoulos et al 707/721
2011/0184956	A1*	7/2011	Dantsker et al 707/741
2013/0103443	A1*	4/2013	Ptak et al 705/7.13
2013/0159233	A1*	6/2013	Mason et al 706/45
2013/0159826	A1*	6/2013	Mason et al 715/205

<sup>\*</sup> cited by examiner

Primary Examiner — Pierre Vital
Assistant Examiner — Nargis Sultana
(74) Attorney, Agent, or Firm — Fish & Richardson P.C.

#### (57) **ABSTRACT**

Methods, systems, and apparatus, including computer programs encoded on computer storage media, for ranking search results. One of the methods includes determining, for each of a plurality of groups of resources, a respective count of independent incoming links to resources in the group; determining, for each of the plurality of groups of resources, a respective count of reference queries; determining, for each of the plurality of groups of resources, a respective groupspecific modification factor, wherein the group-specific modification factor for each group is based on the count of independent links and the count of reference queries for the group; and associating, with each of the plurality of groups of resources, the respective group-specific modification factor for the group, wherein the respective group-specific modification for the group modifies initial scores generated for resources in the group in response to received search queries.

#### 46 Claims, 5 Drawing Sheets

